




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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,680	11/25/2003	Goran Gustafsson	P69331US0	3052
136	7590	12/15/2004	EXAMINER	
JACOBSON HOLMAN PLLC 400 SEVENTH STREET N.W. SUITE 600 WASHINGTON, DC 20004			ANYA, IGWE U	
			ART UNIT	PAPER NUMBER
			2825	

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/720,680	Applicant(s) GUSTAFSSON ET AL.	
	Examiner Igwe U. Anya	Art Unit 2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 – 4, and 6 – 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Tanaka (US Patent 6600225).

3. Tanaka teaches a method for forming interlayer connections in a layered electronic device (fig. 1A – 13C), particularly a thin-film device for storing or processing of data, wherein the device comprises electrical connections between circuitry located in two or more circuit layers separated by layers of electrically insulating material, wherein conducting material is applied as current paths on each circuit layer for connecting the circuitry located therein and joined with interlayer connections consisting of plugs or wires of highly electrically conducting material penetrating said interlayers of electrically insulating material, wherein the plugs or wires in the plane of said interlayers have a cross section with dimensions that are longer in one direction, with longitudinal dimension of representative magnitude Y and transversal dimension of representative magnitude X, such that $Y > X$ (col. 5 lines 14 – 23);

wherein the method is characterized by forming a plug or wire (fig. 9C element 4) in one and the same step as used for applying the conducting material (fig. 9C element 5) for a conducting path on an overlying circuit layer (col. 12 line 49 – 57);

characterized by providing said plug or wire for connecting current paths in the form of at least one narrow stripe electrode in one or more circuit layers, and in case of more than one, providing all stripe electrodes oriented in parallel, and by orienting said plug or wire such that its longitudinal dimension becomes parallel to the longitudinal direction of said at least one stripe electrode (fig. 1C element 5);

characterized by forming said plug or wire completely contained within a footprint of said at least one stripe electrode (fig. 5); and

characterized by forming the plug or wire with a ratio between the longitudinal and transversal dimensions Y resp. X such that $Y/X > 2.5$ (col. 7 lines 39 – 44).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 5, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka (US Patent 6600225) in view Pinter (US Patent 5322816).

7. Tanaka teaches the features previously outlined, but lacks forming the plug or wire with the end sides along the short dimension tapering outwards towards the overlying circuit layer.

8. However, Pinter teaches forming the plug or wire with the end sides along the short dimension tapering outwards towards the overlying circuit layer (fig. 1D) to provide excellent step coverage for high conduction and reliability (col. 5 lines 14 – 16).

9. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Pinter into the Tanaka reference to provide low resistance path for power or signal between interlayers.

10. Prior art considered, but not used in the rejection include Park et al. (US Patent 6555450), Lee (US Patent 6200855), Wada et al. (US Patent 6307267), Kim et al. (US Patent 6342416), and Tsunemine et al. (US Patent 6501113).

Remarks

11. Applicant's arguments filed September 30, 2004 have been fully considered but they are not persuasive. Tanaka teaches an inter layer dielectric (fig. 9C element 3C), a

plug (4) in the ILD, and a wiring (5) on the ILD formed simultaneously. Tanaka further teaches the optimum dimensions of plug. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Igwe U. Anya whose telephone number is (571) 272-1887. The examiner can normally be reached on M - F 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Igwe U. Anya
Examiner
Art Unit 2825

IA

December 10, 2004


MATTHEW SMITH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800